

PERSISTENT FECAL FISTULÆ.

BY I. S. STONE, M.D.,
Washington, D. C.

ONE of the most distressing and annoying of post-operative sequelæ is fecal fistulæ. As all surgeons know, the greater number of these close spontaneously; indeed, such is the rule; yet we occasionally find it necessary to resort to some form of surgical relief. Persistent fistulæ generally, in fact always, have some definite cause which serves to prevent closure, such as extensive peritoneal adhesions between bowel surfaces. Small fistulæ in healthy bowel heal readily, while those in unhealthy bowel, *per contra*, as in tubercular disease, may persist indefinitely. Perhaps the larger number of cases follow in the wake of appendicial abscess, although we not infrequently see these close spontaneously after many days. Some of the causes of permanent fistulæ must in some instances be removed before closure will take place, as may be seen in certain cases where peristalsis is either reversed or interfered with by adhesions. Thus we occasionally see and have seen reports of cases requiring extensive surgery, including anastomosis, before a cure could be secured. It may safely be said here that there is no routine treatment of fecal fistulæ. No one method will suit all cases, and we now wish to mention certain methods which we believe to be followed by the best results.

Our first effort should be after the method of Greig Smith, to cut down upon each side of the fistula to the peritoneum without opening into the peritoneal cavity, dissect about two

inches of the peritoneum away from the abdominal wall on each side, or around the fistula as a centre, then withdraw the peritoneum with attached and adherent bowel far enough to easily close the fistula. It is due this great surgeon to give his reasons for suggesting this procedure, which he claims is always successful. He takes the position that peritoneal surfaces do not unite as firmly as denuded surfaces, and claims that these openings in the gut are closed safely and speedily by rough cicatricial coaptation. The diagram shows Smith's method.¹ Surely such a plan may be tried, as it is far easier and safer than any other method worthy of consideration, but obviously can be used in superficial fistulæ only.

We need scarcely refer to the methods of closure practised by all surgeons in appropriate cases, such as cutting down upon the gut and excision of the fistula, to be followed by closure with Lembert sutures or the excision of a loop of more or less diseased bowel and end-to-end anastomosis. These methods, as well as lateral anastomosis, may often be used with advantage, but are so well known and universally used as to require no further mention here.

A permanent fistula following an operation upon an appendicial abscess may require anastomosis by exclusion. This operation, which has apparently been the result of Dr. Senn's experimental work upon animals, will occasionally be required before we can close certain fistulæ, especially those with a tortuous sinus, not connecting with intestine immediately under the external wound. If the cæcum and ascending colon are greatly thickened and bound firmly by adhesions, such a condition, if present, would constitute a partial obstruction to the passage of intestinal contents and render almost any operation upon the bowel entirely useless. In such cases, perhaps after a trial at direct closure, the surgeon may take a section of ileum as near the caput coli as

¹ This may be seen in Greig Smith's work on "Abdominal Surgery," 5th edition, vol. II., p. 728.

convenient, and transplant or make end-to-side anastomosis to the transverse colon.¹

Dr. Kamerer,² in a valuable paper on intestinal anastomosis, establishes the fact, as claimed by Dr. Senn, that fecal accumulation in the excluded portion of gut really amounts to but little, if any, inconvenience or danger. The excluded portion rapidly atrophies. As all well know, the Murphy button may be very convenient in such end-to-side anastomoses. Dr. Kamerer claims his as the first successful case recorded, and is, briefly, as follows: Supposing we have a permanent fistula in the region of the appendix, a result of gangrenous appendicitis, leaving a large opening, which is really an artificial anus. Kamerer opens the abdomen, divides the ileum some inches away from the head of the cæcum, closes the distal portion, and unites the proximal end, as above stated, to the transverse colon. It is evident that fecal discharge through the fistula must cease at once, and if the patient recovers from the major operation a curetting will aid in the closure of the sinus. Some authors having tried lateral anastomosis for similar reasons occasionally find the fistula refuse to heal, because all fecal circulation through that portion of gut in which the fistula is situated is not prevented.

The pelvic surgeon frequently has to fear fistulæ resulting from injured bowel, which he encounters during the enucleation of pus sacs, etc. The sigmoid and upper rectum usually suffer here, and their fistulæ are most difficult of closure, owing to their situation, which is deep in the pelvis and covered with coils of superimposed bowel.

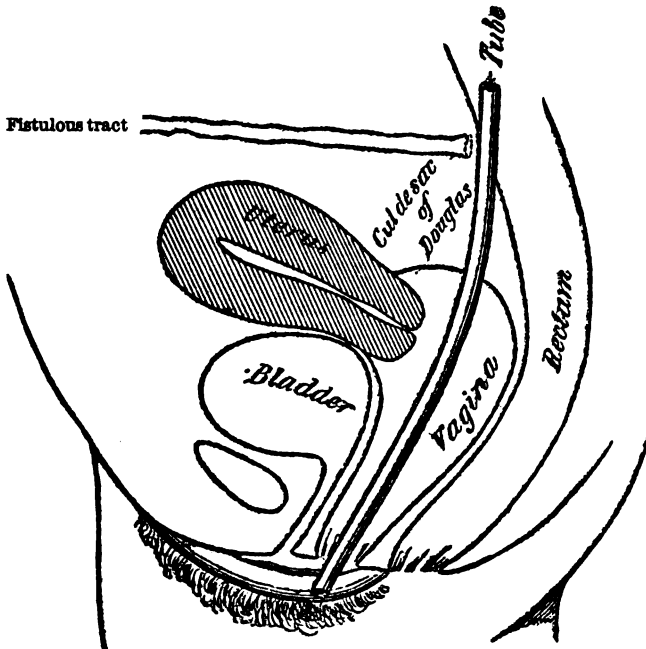
Beside the situation which renders access difficult, the func-

¹ We find that Maisonneuve was among the first to suggest lateral anastomosis for cure of fistula, and made numerous experiments upon animals. Billroth, in 1881, performed such an operation, but lost his patient. Next to try this expedient was Von Hecker (Wien. Med. Wochenschrift, 1888, No. 17; 1892, No. 1). But the names of Elliot, Porter and Kamerer in this country (Boston Medical and Surgical Journal, vol. cxxix., p. 518) appear to be foremost among those who essayed to overcome these troublesome lesions by some form of surgical handicraft.

² Medical Record, February 20, 1897.

tion of the rectum serves to perpetuate the fistula, because it is a receptacle or reservoir for gases and fecal matter. The writer's successful experience with two cases of recto-abdominal fecal fistula of long standing appears to justify brief mention of the method used, as we think it has a future.

Mrs. W., operated upon in Columbia Hospital, November 21, 1896, by celiotomy for enucleation of large tubo-ovarian



The cut shows the tube in position. The fistulous tract has been completely severed.

abscesses. Fecal fistula resulted, which resisted vaginal hysterectomy one month later. When hysterectomy was done we hoped, by a liberation of adherent bowel in this as in other cases, to secure closure.

During the four years succeeding operation the patient became enormously fat, with a very thick abdominal wall, and, furthermore, refused abdominal section. Therefore, we made use of the following method (see diagram): In Janu-

ary, 1900, the patient was placed in the lithotomy position and the vagina incised over the cicatrix, much as in beginning vaginal hysterectomy. Coming upon dense adhesions, these were forcibly separated by finger and forceps until the fistula was reached where it joined the rectum, and was recognized by a sound introduced through the fistula by way of the abdominal opening. A sound in the rectum also aided in finding the point where the fistula communicated with the gut. After opening the fistula tract a long forceps was introduced, which carried a rubber tube through the vaginal opening into the rectum, which was secured in position by sutures to the wounds. The tube allowed the escape of all the gases from the rectum, and also some thin fecal matter, during the two weeks it was kept in position. It was thought possible that the sinus would heal if we could in any manner divert the fecal current. In this we were not disappointed, for we failed to force colored water through the fistula after the tube was removed from the recto-vaginal opening.

The tube was allowed to remain in the rectum for two weeks, after which time the abdominal sinus was washed out daily with a weak solution of formalin, and finally the tract closed permanently about one month afterward. The recto-vaginal opening also closed promptly. The result was peculiarly gratifying, because the patient, a most excellent lady, dreaded any operation through the abdomen, and quite naturally so, on account of the great danger to which she was exposed at the time of her first section. I had concluded to suggest in this case, as an ultimate resort, the creation of an artificial anus by colotomy, hoping to divert the discharges away from the sigmoid and rectum temporarily, in order to insure a clean bowel and to facilitate excision of the fistula and insertion of a Murphy button at some future date.

In appropriate cases we suggest celiotomy, separation of adhesions, excision of the diseased structures, including the fistula, and end-to-end anastomosis by the Murphy button. It must be remembered, however, that even in cases having

been operated upon by ourselves we seldom know what difficulties may be encountered. How much more difficult, then, must it be to undertake the cure of a patient, the nature and extent of whose infirmities we can only guess from the mere presence of an external fistulous communication with her intestines. In one unfortunate woman who had a fecal fistula of five years' standing we found beside the recto-abdominal opening two loops of ileum discharging into this fistula, also two artificial anastomoses between coils of small intestine and descending colon, one near the splenic flexure, another at the junction of the colon and sigmoid.

In conclusion we would suggest :

1. That in all persistent fistulæ we must, for obvious reasons, first remove any foreign body, such as silk.

2. That all attempts at skin closure or by cauterization or curettement of persistent fecal fistulæ are generally unsuccessful.

3. In all cases where a fistula connects with a superficial coil of intestine the method of Greig Smith may be tried before resorting to radical operations.

4. In the deep-seated fistula requiring abdominal section we must choose between excision and some form of anastomosis, for we will rarely find the case so simple as to permit inversion of the fistulous portion and direct suture.

5. In operating for such deep-seated fistulæ we must not fail to liberate imprisoned bowel and restore the normal peristalsis, permitting free motion of intestinal coils and direct the fecal current in its proper course.

6. Finally, in recto-abdominal fistula we should, if possible, convert the same into a recto-vaginal fistula and secure closure of the tract before the temporary fistula is allowed to close.

NOTE. This subject was considered by the Society in 1893, having been introduced by Dr. Mundé in a paper read that year. The paper and discussion indicated a very conservative tendency with regard to treatment of fecal fistula, which it is perhaps wise to emulate at the present time, for the writer has found these secondary operations decidedly more formidable than any others. We have found Dr. Mundé's suggestion in the paper mentioned a good one, and it evidently succeeds by accomplish-

ing the same result in rather a different way from that suggested by the writer. Dr. A. P. Dudley (*American Journal of Obstetrics*, 1892, vol. xxv., No. 2) has collected and reported seventy-seven cases of fecal fistula. It appears possible to obtain only partial reports from journal articles or by correspondence, hence the writer has not attempted to add to the number already reported by Dr. Dudley. The writer cannot close this paper without calling especial attention to Dr. M. D. Mann's article in the *American Medical Quarterly* for June and September, 1899, and January, 1900, entitled "Experiences in Intestinal Surgery."

DISCUSSION.

DR. A. F. CURRIER, of New York.—The condition under consideration is one that must come to all of us sooner or later and with features more or less difficult of control. For convenience I would divide intestinal fistulæ into those which are in the small and those which are in the large intestine. I have seen but one case of fistula of the small intestine, and that remained obstinately open. It was so near the duodenum that it is probable that a portion of intestinal tissue underwent maceration and digestion. The case was operated upon and cured, the intestine being resected and lateral anastomosis performed. In such cases it seems to me, according to ordinary anatomical and physiological conditions, that nature will not help us out much. Therefore, instead of waiting, it is better to undertake a radical operation involving a portion of the bowel as soon as possible after the fistula has been established. On the other hand, in cases in which the fistula is situated in the colon, sigmoid flexure, or rectum, in which there is a discharge of unmistakable fecal matter, I think it is well not to be too hasty in instituting operative procedures. I have seen a number of cases of that kind in which, after waiting for a few weeks or months, a cure has been effected by nature, the closure of the intestinal opening being permanent.

Inasmuch as the complications which Dr. Stone has indicated are so varied and sometimes so severe, I think it is better to give nature a fair chance. In those cases in which the fecal discharge ceases and there is only an occasional bubble of gas, still more are we justified in waiting and hoping for a cure by the beneficent efforts of nature. I have a case of this character under observation; the woman having very little trouble, only

an occasional discharge of gas and no fecal matter.¹ I think we may lay down the rule that in these cases it is well to wait even a long time.

As to the action of silk or other foreign body, I question whether the removal of silk ligatures will in most cases effect the cure of a fecal fistula. The silk, as a rule, is not applied to that portion of the bowel where the fistula takes place, and, therefore, even were a ligature discharged we could not rationally expect that the difficulty would by this means be relieved. For myself the rule has been that where the injury seems to be undergoing a process of change which promises a cure, to wait and see if nature will not effect a cure.

DR. A. W. JOHNSTONE, of Cincinnati.—As a matter of justice to two dead men, I would state that the method outlined by Dr. Stone was taught by Lawson Tait to Greig Smith. I assisted Mr. Tait the first time he closed a fistula in that way, which was his seventeenth operation. Since 1886 I have used this method in closing fistulæ of every description, and succeeded in the third operation of closing ureteral fistulæ. I always use it on a vesico-vaginal fistula, splitting the viscus and turning part of it out and part in. In ureteral fistulæ nothing but very fine instruments will accomplish the work.

DR. WILLIAM R. PRYOR, of New York.—Of the fecal fistulæ which we find at the time of operation, and which the opponents of the vaginal method are pleased to say are caused by the vaginal operation, I have seen three: two were due to rupture of an abscess into the rectum, the other was caused by a woman disobeying orders and wearing an iodoform dressing six weeks after she returned home. In that case the fistula was between the vagina and a knuckle of the small intestine. The recto-vaginal fistulæ close without operative procedure if the sphincter ani is kept distended by means of a speculum. In the case of the fistula into the small intestine I dissected the vaginal scar open; freed the intestine from adhesions; pulled it into the vagina; sutured it by means of fine kangaroo tendon in two tiers. The vagina was then closed.

DR. C. P. NOBLE, of Philadelphia.—I have seen a goodly

¹ Closure took place within a few weeks from the above statement.

number of fecal fistulæ, all of which have closed spontaneously except four. Three remain open, and one recovered after operation.

When the fistula is in the larger bowel and the case is not tubercular it is my experience that the prognosis is most excellent. In such a case I would be very slow to operate. In tubercular cases the prognosis is very bad, whether or not operation is done. In one such case operated on in my experience the result was a failure, and in quite a number of cases within my knowledge operated on by others under such circumstances patients have died or the results have been unsatisfactory.

DR. A. P. DUDLEY, of New York.—In operating in one case for cancer and in breaking up the adhesions I tore in two the small intestine. I put in a Murphy button. The uterus could not be removed, and I found that the structures were so thoroughly involved, including the rectum, that I put the patient to bed, expecting she would die. The button was recovered, having worked down to the rectum and out through the fistula behind the uterus. The fistula healed and the woman recovered.

DR. P. F. MUNDÉ, of New York.—I have been told that prevention of abdominal fistulæ could be secured by clean surgery. I think my friend Dr. Noble stated that fistula was always the result of unclean surgery. He is often right, yet fecal fistulæ do sometimes occur when the surgery has been perfectly clean. I have within a year had three cases of abdominal fistula resulting from intentional opening of the intestines to relieve obstruction to the bowels produced by general peritonitis following abdominal section. In the first case the Murphy button operation was performed, as the fistula refused to close spontaneously. The patient did not survive the operation. The second case recovered. The woman had a fecal fistula through the vagina after panhysterectomy for double intraligamentous abscesses. The fecal fistula in the vagina closed spontaneously, but the abdominal fistula was so large that after two attempts to close it by suture through the wound the intestine was resected and the Murphy button applied. In one case of fistula above the sigmoid in which the gut was adherent the layer operation in

two sittings gave a cure. In another, Szymanowski's operation was performed, which consists in paring the one side of the skin and sliding it under the other side. This produced complete closure of the open gut.

I agree with Dr. Currier that it is well to wait in fistulæ of the large bowel; they are more apt to close spontaneously.

DR. MATTHEW D. MANN, of Buffalo.—I agree that fistula of the large intestine is apt to heal of itself, and I would be very conservative in my management, giving it a long time to heal. With the small intestine the condition is somewhat different; the opening will not heal as well as in the larger. The further up the lesion is in the small intestine the less likelihood is there of healing. The nearer to the stomach the harder is it for healing to occur; the gastric juices seem to interfere with the reparatory process. I believe, therefore, that we are almost always obliged to open the abdomen in these fistulæ of the small intestine.

Further treatment must depend upon the size of the opening. If it is close to the mesentery it will be dangerous to sew it; if the opening be large we cannot sew it for fear of stricture. In these cases we are obliged to resect. I have seen a number of these cases and have had satisfactory results. In one or two cases the result has been accomplished by a plastic operation on the abdominal wall, without opening and cutting down upon the intestines.

DR. REUBEN PETERSON, of Chicago.—In a case of double pyosalpinx I operated through the abdomen, and in feeling for the pus the sac opened into the rectum. I packed with gauze, and following that there was a fecal fistula which did not close, and the condition went on for a year. At that time I removed the uterus and hoped to close from below. This also failed. Under these conditions it seems to me that it is very dangerous to advise patients to undergo abdominal operations when the fistula is low down.

One peculiarity of this case, which retains the fecal fistula, is that the patient refuses to have anything done, although twice in twenty-four hours it is necessary to pack gauze into the abdominal opening.

DR. A. LAPHORN SMITH.—In case of fecal fistula I have found the injection of methyl-blue solution into each opening of the fistula of great advantage, as we are thus enabled to dissect out the fistulous canal until we reach its other end in the bowel. The fistulous tract being deeply stained is easily distinguished from the other tissues. In a case of fistula of a year's duration following an appendectomy by another surgeon who simply ligatures the appendix and cuts it off without turning in the mucous membrane, I assisted my colleague, Dr. Springle, at the Western Hospital, to close it, and we found the methyl-blue of great help in a very difficult operation.

DR. STONE (closing).—I think the Society is a unit as to the danger of opening the abdomen except after exhausting every method of superficial work. The deeper fistulæ along the sigmoid and rectum are those which give us the most trouble.

In regard to the claim of priority made for Lawson Tait by Dr. Johnstone, I had no idea that he claimed this procedure. Greig Smith's method is not a typical flange suture, and I think the criticism of Dr. Johnstone does not apply to this procedure.

Dr. Mundé's method is applicable in a large number of fistulæ where the sinus is uncontaminated with fecal matter. In the presence of fecal discharge my own method has the advantage of dividing off the fecal fistula, and leaves no opening. The method has been successful in two cases.